

Please cancel claims 1-18, 20, and 24, without prejudice.

### **REMARKS**

This Amendment is in response to the Official Action mailed January 15, 1997.

Claims 19, 21-23, and 25-34 remain in the application. Claims 19, 21-23, 26-30, 33, and 34 have been amended. Claims 1-18 stand withdrawn as a result of Applicant's provisional election without traverse to prosecute the invention of Group II, claims 19-34, in response to an Election/Restriction requirement via telephone January 3, 1997. Applicant affirms the election of the Group II claims. Claims 1-18, 20, and 24 have been canceled without prejudice.

Applicants note that an initialed copy of the PTO-1449 filed by the Applicants was not forwarded with the Official Action. Applicants respectfully request that a copy be forwarded with the next Official Communication.

#### **A. 35 U.S.C. § 102(b), Claims 19 and 20**

Claims 19 and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Reference 63-179537 published July 23, 1988 attributed to Kuroda ("Kuroda") (Official Action, page 3). Claims 19 and 20 further stand rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Reference 63-104343 published May 9, 1988 attributed to Kuranaga ("Kuranaga") (Official Action, page 3).

To anticipate a claim for a patent, a single reference must contain all its essential elements. Hybritech Inc. v. Monoclonal Antibodies, Inc., 231 U.S.P.Q. 81 (Fed. Cir. 1986).

Independent claims 19 has been amended to recite "securing at least one discrete component to at least one of said stack die, said base die, and said substrate; and electrically connecting said stack die to at least one of said stack die, said base die, and said substrate. These amendments find support in the specification, the original filed claims, and the drawings. Claim 20 has been deleted.

Neither Kuroda nor Kuranaga teach or suggest securing a discrete component within a multi-die assembly as presently claimed. Kuroda merely teaches a "face-down type semiconductor device" mounted to a circuit board with a "bare-chip type semiconductor device" back bonded to the "face-down type semiconductor device". The "bare-chip type semiconductor device" is in electrical contact with the circuit board by bond wires. Kuranaga merely teaches essentially the same arrangement as Kuroda with an additional chip stacked atop and in electric communication with the stacked chip.

Thus, neither Kuroda nor Kuranaga teach or even suggest all of the essential elements of the method of forming a multi-die assembly by stacking dice with a discrete component in the assembly.

Therefore, reconsideration and withdrawal of the rejections of claim 19 and 20 under Section 102(b) are respectfully requested.

B. 35 U.S.C. § 103(a)

Claims 21-29 and 33 - Kuroda and Kuranaga in view of Fogal et al.

Claims 21-29 and 33 stand rejected under 35 U.S.C. § 103(a) as being obvious over Kuroda and Kuranaga in view of U.S. Patent 5,323,060 issued June 21, 1994 to Fogal et al. ("Fogal") (Official Action, at page 4).

The Official Action admits on page 4 that Kuranaga and Kuroda fail to teach the use of discrete components in the assembly and further admits that Fogal et al. teaches attaching discrete components to an assembly, but fails to teach a chip mounted face down to the substrate with a chip mounted face up to the face down chip. The Official Action then jumps to the statement that it would have been obvious to one of ordinary skill in the art to combine the references to achieve the presently claimed invention. However, this is not a proper 103(a) rejection. The M.P.E.P. 706.02(j) sets forth that:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary

skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. **The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.** *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The Examiner has the burden of establishing obviousness, yet has shown no teaching, suggestion, or incentive within Kuranaga, Kuroda, or Fogal et al. to combine these references. In fact, each of Kuranaga, Kuroda, or Fogal et al. are complete and functional in and of themselves, so there would be no reason to use parts from or add or substitute parts to any reference. Thus, since there has been no showing of teaching, suggestion, or incentive to combine the references, cannot be combined to reject claims 21-29 and 33 as obvious under Section 103(a).

Furthermore, Fogal et al. is specific to wire bonding (col.1, lines 6-7, 37-39). Fogal et al. is not concerned with flip-chip attachments. In fact, in the Background of the Invention (col. 1, lines 35-39), Fogal et al. specifically mentions TAB, flip-TAB, and flip-chip attachment, but Fogal et al. rejects these attachment techniques for the wire bonding and stacking technique disclosed. Moreover, Kuranaga and Kuroda were published prior to the filing of the Fogal et al. application, but these references would have been disregarded since they do not relate exclusively to wire bonding of stacked chips. *No!*

Since the limitation of using discrete components set forth in claim 21 has been incorporated into amended independent claim 19, the above-stated arguments are equally applicable to amended independent claim 19.

Therefore, reconsideration and withdrawal of the Section 103(a) rejection of claims 21-29 and 33 are respectfully requested.

Claims 30 and 31 - Kuroda and Kuranaga in view of Rostoker and Takiar et al.

Claims 30 and 31 stand rejected under 35 U.S.C. § 103(a) as being obvious over Kuroda and Kuranaga in view of U.S. Patent 5,399,898 issued March 21, 1995 to Rostoker

("Rostoker") and U.S. Patent 5,422,435 issued June 6, 1995 to Takiar et al. ("Takiar et al.") (Official Action, at page 5).

The amendment of claim 19, from which claims 30 and 31 either directly or indirectly depend, requires the inclusion of a discrete component in the assembly. Neither Kuroda, Kuranaga, Rostoker, nor Takiar et al. teach or suggest the use of discrete components in the assembly. Thus, since claims 30 and 31 require the inclusion of a discrete component in the assembly, the references, either alone or in combination, fails to render claims 30 and 31 obvious.

Furthermore, Rostoker relates only to bridging with flip-chip assemblies. Takiar et al. relates only to bridging wire bonded assemblies. There is no motivation to combine the references with regard to bridging two face-down chips with one face-up chip to be wire bonded.

Therefore, reconsideration and withdrawal of the Section 103(a) rejection of claims 30 and 31 are respectfully requested.

Claims 32 and 34 - Kuroda and Kuranaga in view of Rostoker, Takiar et al., and Fogal et al.

Claims 32 and 34 stand rejected under 35 U.S.C. § 103(a) as being obvious over Kuroda and Kuranaga in view of Rostoker, Takiar et al., and Fogal et al. (Official Action, at pages 5 and 6).

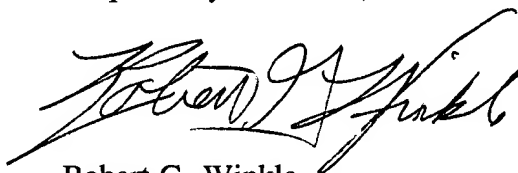
# The Applicant notes that the Official Action required alleged teachings in the form of bits and pieces from five references in order to attempt the argument that claims 32 and 34 are obvious. However, the only way one might find that the bits and pieces from prior art suggests the present invention is with impermissible hindsight from the present application. The Examiner is respectfully reminded that there must be some teaching, suggestion or motivation in the art, and not in Applicants' disclosure, supporting the Examiner's combination of documents. See In re Fine, 5 U.S.P.Q.2d 1596, 1599-1600 (Fed. Cir. 1988) ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the

prior art to deprecate the claimed invention"); Uniroyal v. Rudkin-Wiley, 5 U.S.P.Q.2d 1434, 1438 (Fed. Cir. 1988) (something in prior art as a whole must suggest desirability of combination). Both the suggestion to make the claimed combination and a reasonable expectation of success must be founded in the prior art, not in applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

The Official Action has shown no teaching or suggestion in any of the five references to combine the bits and pieces together in the manner described on page 6 of the Official Action to render claims 32 and 34 obvious. Therefore, reconsideration and withdrawal of the Section 103 rejections of claims 32 and 34 are respectfully requested.

In view of the amendments and remarks herewith, the present application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly requested.

Respectfully submitted,



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